20 CHAPTER ONE

Dial indicators are available in various ranges and graduations. They use three basic types of mounting bases: magnetic, clamp, or screw-in stud. When purchasing a dial indicator, select the magnetic stand type (B, **Figure 36**) with a continuous dial face (**Figure 37**).

Cylinder Bore Gauge

A cylinder bore gauge is similar to a dial indicator. The gauge set shown in **Figure 38** consists of a dial indicator, handle, and different length adapters (anvils) to fit the gauge to various bore sizes. The bore gauge is used to measure bore size, taper and out-of-round. When using a bore gauge, follow the manufacturer's instructions.

Compression Gauge

A compression gauge (**Figure 39**) measures combustion chamber (cylinder) pressure, usually in psi or kg/cm². The gauge adapter is either inserted or screwed into the spark plug hole to obtain the reading. Disable the engine so it will not start and hold the throttle in the wide-open position when performing a compression test. An engine that does not have adequate compression cannot be properly tuned. See Chapter Three.

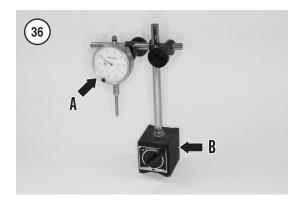
Spark Tester

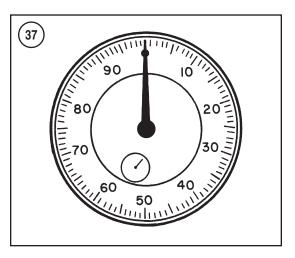
A quick way to check the ignition system is to connect a spark tester to the end of the spark plug wire and operate the engine's kickstarter. A visible spark should jump the gap on the tester. A variety of spark testers are available from aftermarket manufacturers. Use of this tool is described in Chapter Two.

Multimeter

A multimeter (**Figure 40**) is an essential tool for electrical system diagnosis. The voltage function indicates the voltage applied or available to various electrical components. The ohmmeter function tests circuits for continuity and measures the resistance of a circuit.

Some test specifications for electrical components are based on results using a specific test meter. Results may vary if a meter not recommend by the





manufacturer is used. Such requirements are noted when applicable.

Ohmmeter (analog) calibration

Each time an analog ohmmeter is used or if the scale is changed, the ohmmeter must be calibrated. Digital ohmmeters do not require calibration.

- 1. Make sure the meter battery is in good condition.
- 2. Make sure the meter probes are in good condition.
- 3. Touch the two probes together and watch the needle. It must align with the 0 mark on the scale.
- 4. If necessary, rotate the set-adjust knob until the needle points directly to the 0 mark.

ELECTRICAL SYSTEM FUNDAMENTALS

A thorough study of the many types of electrical systems used in today's ATVs is beyond the scope

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